

IN THE CLAIMS

CLEAN COPY OF AMENDED CLAIMS:

*Sub
C2*
1. (Amended) A semiconductor chip mounting component comprising:

a support structure having a top surface, a bottom surface, a central portion, a peripheral portion surrounding the central portion, and a gap extending through said support structure between said surfaces;

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a plurality of electrically conductive leads, each said lead having a connection section extending across said gap, said connection section having a first end disposed on the support structure on one side of the gap, a second end secured to said support structure on an opposite side of said gap, and a frangible section between the first and second ends;

at least one elongated bus disposed on the peripheral portion of said support structure alongside said gap, wherein each of said leads extends across said gap and is connected to the bus.

*Sub
C3*
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17. (Amended) A component as claimed in claim 1, wherein said gap includes a plurality of elongated slots extending substantially around said central portion so that the slots are disposed between said central portion and said peripheral portion, the component including a plurality of said elongated buses arranged on said peripheral portion so that one such bus extends alongside each said slot.

MARKED-UP COPY OF AMENDED CLAIMS:

1. (Amended) A semiconductor chip mounting component comprising:

a support structure having a top surface, a bottom surface,
a central portion, a peripheral portion surrounding the central
portion, and a gap extending through said support structure
between said surfaces;

a plurality of electrically conductive leads, each said lead
having a connection section extending across ~~the~~ said gap, said
connection section having a first end disposed on the support
structure on one side of the gap, a second end secured to said
support structure on an opposite side of said gap, and a
frangible section between the first and second ends;

at least one elongated bus disposed on the peripheral
portion of said support structure alongside said gap, wherein each
of said leads extends across said gap and is connected to the
bus.

17. (Amended) A component as claimed in claim 1, wherein ~~said~~
~~support structure includes a central portion and a peripheral~~
~~portion,~~ said gap including includes a plurality of elongated
slots extending substantially around said central portion so that
the slots are disposed between ~~the~~ said central portion and ~~the~~
said peripheral portion, the component including a plurality of
said elongated buses arranged on said peripheral portion so that
one such bus extends alongside each said slot.

REMARKS

This Amendment After Final is in response to the Final Office Action mailed August 10, 2001. Enclosed herewith is a petition requesting a three-month extension of time for extending the deadline for responding to the Final Office Action from November 10, 2001 to and including .

As an initial matter, Applicants note that claim 1 has been amended to, inter alia, incorporate one or more limitations from claim 17 therein.

The Examiner rejected claims 1-25 under 35 U.S.C. §112, second paragraph, as being indefinite, asserting that the term "frangible" used in claims 1, 6-7, 15-16, 19, and 22-25 is vague. In response, Applicants note that the term "frangible" is used to describe a portion of a lead in dozens of issued U.S. patents. For example, claim 1 of U.S. patent 6,274,822 discloses a method of making a semiconductor connection component including leads having "frangible" sections. Claim 11 of U.S. Patent 6,255,723 discloses a microelectronic lead element including a "frangible portion adjacent said bonding region." Claim 1 of U.S. Patent 6,218,213 discloses a method of making a "lead having a frangible intermediate section." In addition, the specification of the present application clearly defines the term "frangible." Beginning at page 44, line 21, the specification (FIG. 24) of the present application states:

The dimensions and configuration of the lead will vary somewhat depending upon the materials of construction and depending upon the desired application. Leads having connection sections and frangible sections formed principally or entirely from gold may be

employed. For gold or other noble metal leads with relatively small spacing between leads, the width w_1 or dimension between the opposed edges of the lead in the direction transverse to the length of the connection section may be between about 15 microns and about 38 microns. The second end securement section 1370 may have a similar width. The frangible section 1372 of each lead may be defined by a pair of notches extending inwardly from the opposed edges of the lead. Each such notch may have a pair of angularly arranged edges defining a generally V-shaped notch with an included angle A (Fig. 24) desirably between about 45 degrees and about 120 degrees. The width w_2 of the frangible section in the notch, i.e., the smallest dimension of the neck or frangible section in the direction transverse to the length of the connection section may be between about 5 microns and about 12 microns. Most preferably, the leads, including the connection sections have a thickness or vertical extent perpendicular to the plane of the dielectric layer 1332 (perpendicular to the plane of the drawings in Figs. 23 and 24) of about 10 to about 30 microns and most desirably about 25 microns. Preferably, each bus 1353 has a width w_3 , i.e., the dimension transverse to the length of the bus, of at least about 50 microns and more preferably between about 50 and about 200 microns and a thickness of about 10 to about 30 microns and more preferably about 25 microns.

Thus, the specification provides a clear standard for ascertaining the meaning of the term "frangible," and one of ordinary skill in the art would be reasonably apprised of the scope of the invention as required by MPEP 706.03(d). Finally, Applicants respectfully note that the present application is a continuation of commonly assigned U.S. Patent 6,054,756, and that the Examiner of the present application allowed the '756 patent without objecting to the term "frangible" in claim 1-3 and 9 thereof. For all of the above reasons, Applicants respectfully assert that claims 1, 6-7, 15-16, 19 and 22-25 satisfy the requirements of 35 U.S.C. § 112, second paragraph, and respectfully request that the Examiner's rejection be withdrawn.

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The Examiner rejected claims 1, 4-16 and 20-22 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 4,380,042 to Angelucci. Referring to FIGS. 3 and 4 of the '042 patent, the Examiner asserts that Angelucci's connecting frame 32 teaches Applicants' "bus bar." In response to the Examiner's § 102(b) rejection, Applicants have amended claim 1 to more clearly define the scope of the present invention. Amended claim 1 is unanticipated by Angelucci because the cited reference neither discloses nor suggests a semiconductor chip mounting component including "a support structure having a top surface, a bottom surface, a central portion, a peripheral portion surrounding said central portion, and a gap extending through said support structure between said top and bottom surfaces; [and] ... at least one elongated bus disposed on said peripheral portion of said support structure alongside said gap, wherein each of said leads extend across said gap and is connected to the bus." Clearly, Angelucci's connecting frame 32 is not located on the outer portion of tape 20, but is located over semiconductor chip 28. Thus, claim 1 is unanticipated by Angelucci and is otherwise allowable. Claims 4-16 and 20-22 are also unanticipated, inter alia, by virtue of their dependence from claim 1, which is unanticipated for the reasons set forth above.

The Examiner rejected claims 1, 27-21 and 25 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 4,801,999 to Hayward. A review of Hayward indicates that it does not teach or even suggest that its leads have a frangible section. As is well known, for "a prior art reference to anticipate in terms of 35

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U.S.C. § 102, every element of the claimed invention must be identically shown in a single reference." In re Bond, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). Thus, claim 1 cannot be anticipated by Hayward because the cited reference neither discloses nor suggests a semiconductor chip mounting component including "a plurality of electrically conductive leads, each said lead having a connection section extending across said gap, said connection section having a first end disposed on said support structure on one side of the gap, and a second end secured to said support structure on an opposite side of said gap, and a frangible section between the first and second ends." Hayward simply does not teach or suggest the "frangible section" required by the limitations recited in claim 1. Thus, claim 1 is unanticipated by Hayward and is otherwise allowable. Claims 17-21 and 25 are also unanticipated, inter alia, by virtue of their dependence from claim 1, which is unanticipated for the reasons set forth above.

Claims 1-3, 20-21 and 25 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 5,459,634 to Nelson. In response, Applicants respectfully assert that Nelson does not teach leads having a frangible section that is broken off. Nelson's leads do not include a frangible section, nor is any frangible section or easily breakable lead contemplated in Nelson. Thus, claim 1 is unanticipated because Nelson neither discloses nor suggests a semiconductor chip mounting component including "a plurality of electrically conductive leads, each said lead having a connection section extending across said gap,

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said connection section having a first end disposed on said support structure on one side of the gap, a second end secured to said support structure on an opposite side of said gap, and a frangible section between the first and second ends." Claims 2-3, 20-21 and 25 are also unanticipated, inter alia, by virtue of their dependence from claim 1, which is unanticipated for the reasons set forth above.

Claims 1 and 20-25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of U.S. Patent 5,550,406 to McCormick and U.S. Patent 5,459,634 to Nelson. Claim 1 is unobvious over the combination of McCormick and Nelson because the cited references neither disclose nor suggest a plurality of electrically conductive leads, with "each said lead having a connection section extending across said gap, said connection section having a first end disposed on said support structure on one side of the gap, a second end secured to said support structure on an opposite side of said gap, and a frangible section between the first and second ends." McCormick, at col. 12, lines 47-52, describes its leads being "broken and bent downward past the polyimide layer 320 to contact a second conductive plane." (See FIG. 3A.) McCormick, however, provides no teaching or suggestion that the leads include a "frangible" portion as disclosed in Applicants' specification and shown in Applicants' FIG. 24. Claim 1 is also unobvious because the combination of McCormick and Nelson neither discloses nor suggests "at least one elongated bus disposed on said peripheral portion of said support structure alongside said gap, wherein

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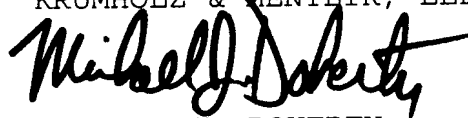
each of said leads extends across said gap and is connected to the bus." For all of these reasons, claim 1 is unobvious over McCormick and Nelson and is otherwise allowable. Claims 20-25 are also unobvious, inter alia, by virtue of their dependence from claim 1, which is unobvious for the reasons set forth above.

As it is believed that all of the rejections, objections and requirements set forth in the Office Action have been fully met, favorable reconsideration and allowance are earnestly solicited.

If, however, the Examiner does not believe that such action can be taken at this time, it is respectfully requested that he telephone Applicants' attorney at (908) 654-5000 in order to overcome any additional objections which he might have. If there are any additional charges in connection with this requested Amendment After Final, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Respectfully submitted,

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